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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,109	02/27/2002	Hiromi Katoh	46547/57,145	6866
21874	7590	01/19/2005	EXAMINER	
EDWARDS & ANGELL, LLP				AWAD, AMR A
P.O. BOX 55874				ART UNIT
BOSTON, MA 02205				PAPER NUMBER
				2675

DATE MAILED: 01/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,109	KATOH ET AL.	
	Examiner	Art Unit	
	Amr Awad	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 September 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 1,4-6 and 41 is/are allowed.
- 6) Claim(s) 2,7-18,22-30,35,36,38 and 42 is/are rejected.
- 7) Claim(s) 19-21,37,39-40 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 2, 7-15, 18, 23-30, 35-36, 38 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimada et al. (US patent N0. 6,219,017; hereinafter referred to as Shimada).

As to claim 2, Shimada (figure 8) teaches a display device for dividing each frame into a number of subframes (R, G & B fields) and displaying one of the subframes after another, said device comprising: correction means for correcting a subframe signal representing one subframe by reference to another subframe signal representing another subframe, and a display panel for displaying each said subframe in accordance with the subframe signal that has been corrected by the correction means (col. 7, lines 13-41). Considering each color (R, G or B) as one subframe and the frame is the combination of R, G and B subframes. By considering that, we can see that Shimada showing correcting each subframe (R for example), which represents the first subframe of the current frame by referring to the B subframe of the previous frame, and when

correcting the non-first one of the subframes (G for example), the previous subframe is the R subframe in the current frame (col. 7, lines 28-41).

As to claim (7-2, 7-35-2, 7-36-2), it is inherent that each color (R, G and B), which represents the subframes, has different wavelength range.

As to claims (8-21) and (9-2), Shimada shows three subframes (R, G & B) has three mutually different wavelength ranges and displays the subframes (figure 8).

As to claims (8-2, 8-35-2, 8-36-2) and (9-2, 9-35-2, 9-36-2), Shimada shows three subframes (R, G & B) have three mutually different wavelength ranges and displays the subframes.

As to claims 10, 11, (12-2, 12-2-35, 12-36-2) and (13-2, 13-35-2, 13-36) as can be seen in figure 8, Shimada shows a memory (field memory 81 to 8-3) to store the subframes (R, G & B) (col. 7, lines 28-40).

As to claims (14-2, 14-35-2, 14-36-2) and (15-2, 15-35-2, 15-36-2), the voltage V1 shown in figures 9-10 fairly reads one additional voltage level described in the claims (col. 9, lines 41-62).

As to claims 18-2, 18-35-2, 18-36-2) as can be seen in col. 9, lines 53-62, Shimada shows that the correction to the subframes is carried out using an arithmetic operation.

As to claims (23-2, 23-35-2, 23-36-2) and (24-23-2, 24-23-35-2, 24-23-36-2), the claims are broad enough that we can consider the frame of Shimada includes three subframes (R, G & B) and wherein two of the subframes (RG or GB for example) are displayed within one frame interval (col. 7, lines 28-41).

As to claims (25-35-2, 25-26-2), (26-35-2, 26-36-2), (27-25-35-2, 27-25-36-2) (28-35-2, 28-36-2), (29-35-2, 29-36-2) and (30-35-2, 30-36-2) Shimada shows a driving device (10) for receiving the subframes (9-1 to 9-3), which fairly reads on the claimed limitations.

As to claims 35-36 and (38-26-35-2, 38-26-36-2), since the claims refreshing before one of the subframes, or after the last one of the subframes of the frames has been displayed, then the refreshing is carried out during the displaying, which inherent to displaying on LCD display.

As to claim 42, using the broadest reasonable interpretation, by having the information about primary color (Red for example); it inherently has information about the other two primary colors (zero green and zero blue).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Tanaka et al. (US patent NO. 6,700,559; hereinafter referred to as Tanaka).

As to claims (16-2, 16-35-2 16-36-2), (17-16-2, 17-16-35-2 17-16-36-2), Shimada does not expressly teach a lookup table for subframe signals representing the previous and current subframes, respectively to correct the subframe in accordance with the lookup table, and a nonvolatile memory on which data required for correcting the subframe.

However, Tanaka (figures 5-6) teaches a correction method for liquid crystal display that includes subframes (R, G & B), each has a LUT (7a) for storing the corrected data to be displayed (col. 8, lines 11-50).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Tanaka having LUT table for storing the corrected data, to be incorporated to Shimada's device so as motivated by Tanaka, to provide a liquid crystal display unit that can correct color reproduction particular to liquid crystal panel by a digital signal control, that can process the correction in high precision (col. 5, lines 28-32).

As to claims (22-2, 22-35-2, 22-36-2), Tanaka (figure 6) shows correcting the 8-bit subframe by adding 4 bits to it for correcting the color (col. 9, lines 227). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Tanaka, to be incorporated to Shimada's device so as motivated by Tanaka, to provide a liquid crystal display unit that can correct color reproduction particular to liquid crystal panel by a digital signal control, that can process the correction in high precision (col. 5, lines 28-32).

Allowable Subject Matter

5. Claim 1 and all other claims that depend directly or indirectly on claim 1 are allowed.

Claims 37, 39 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed 09/03/2004 have been fully considered but they are not persuasive.

Applicant (middle of page 14) argued that there is nothing in the passage (col. 7, lines 30-34) that suggests that the device correcting means corrects a subframe signal representing the first one of the subframes making up a current frame, by reference to a subframe signal representing the last one of the subframes that make up the previous frame. Examiner respectfully disagrees. Even though the passage is referring to correcting the current field using signals of the preceding field; the examiner believes that by considering that, we can see that Shimada showing correcting each subframe (R for example), which represents the first subframe of the current frame by referring to the B subframe of the previous frame, and when correcting the non-first one of the subframes (G for example), the previous subframe is the R subframe in the current frame (col. 7, lines 28-41). Therefore, the examiner believes that the cited reference fairly reads on the claimed limitation.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703)305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. A

AMR A. AWAD
PRIMARY EXAMINER

